Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claim in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented method for utilizing shape analysis to assess human fetal abnormality, comprising:

receiving coordinates of points identifying ~~a~~ an anatomical shape in a human fetal image;

determining one or more coefficients of one or more mathematical functions that describe the identified anatomic shape; and

utilizing the determined one or more coefficients as markers to assess human fetal abnormality.

2. (Original) The method of claim 1, wherein the fetal abnormality is a chromosomal abnormality.

3. (Original) The method of claim 2, wherein the chromosomal abnormality is Down syndrome.

4. (Original) The method of claim 1, wherein the fetal abnormality is Spina Bifida.

5. (Original) The method of claim 1, wherein the points are placed upon a computer monitor.

6. (Original) The method of claim 1, wherein the points are placed upon a 3D ultrasound image.

7. (Original) The method of claim 1, wherein the points trace an outline around a part of the fetal image to be analyzed.

8. (Previously Presented) The method of claim 1, wherein the one or more coefficients are determined by a Fourier analysis.

9. (Previously Presented) The method of claim 1, wherein the one or more coefficients are determined by a shape analysis method selected from the group consisting of elliptical Fourier analysis, polynomials, cubic splines, parametric polynomials, parametric cubic splines, bezier curves, Fourier analysis of equally spaced radii and dual axis Fourier analysis.

10. (Currently Amended) The method of claim 1, wherein the determined one or more coefficients are utilized as markers to assess human fetal abnormality in the first trimester.

11. (Previously Presented) The method of claim 1, wherein utilizing the determined one or more coefficients as markers comprises conducting a statistical analysis on the determined one or more coefficients.

12. (Previously Presented) The method of claim 11, wherein the statistical analysis compares the determined one or more coefficients with reference parameters derived from a statistical distribution of determined one or more coefficients in the unaffected population and/or affected population.

13. (Previously Presented) The method of claim 12, wherein the conducted statistical analysis on the determined one or more coefficients includes at least one of a means calculation, a standard deviation calculation and a correlation calculation.

14. (Previously Presented) The method of claim 12, wherein the conducted statistical analysis on the determined one or more coefficients includes a principal component analysis.

15. (Currently Amended) The method of claim 12, wherein the conducted statistical analysis results in an indiction of risk of human fetal abnormality.

16. (Currently Amended) The method of claim 12, wherein the conducted statistical analysis results in a likelihood ratio for a human fetal abnormality.

17. (Currently Amended) The method of claim 12, wherein the conducted statistical analysis results in an index value to be considered within range or outside of range for a human fetal abnormality.

18. (Currently Amended) The method of claim 1, comprising utilizing the determined one or more coefficients as markers in combination with one or more additional markers to assess human fetal abnormality.

19. (Original) The method of claim 18, wherein the one or more additional markers includes at least one biochemical marker selected from the group consisting of free Beta hCG and PAPP-A, maternal blood alpha-fetoprotein, maternal blood hCG, maternal blood unconjugated estriol, maternal blood dimeric inhibin A, maternal urine total estriol, maternal urine beta core fragment, maternal urine hyperglycosylated hCG and maternal blood hyperglycosylated hCG.

20. (Original) The method of claim 18, wherein the one or more additional markers includes at least one ultrasound marker selected from the group consisting of nuchal translucency, Ductus Venosus, absent or hypoplastic nasal bone, nuchal edema, short femur, hyperehogenic bowel and echogenic foci in the heart.

21. (Previously Presented) The method of claim 1, further comprising:

adjusting the received coordinates to align the shape according to a particular axis before the one or more coefficients are determined.

22. (Previously Presented) The method of claim 1, further comprising:

adjusting the received coordinates before the one or more coefficients are determined by at least one of translating the coordinates, rotating the coordinates and scaling the coordinates.

23. (Previously Presented) The method of claim 22, wherein utilizing the determined one or more coefficients as markers comprises conducting a statistical analysis on the determined one or more coefficients.

24. (Previously Presented) The method of claim 23, wherein the statistical analysis compares the determined one or more coefficients with reference parameters derived from

a statistical distribution of determined one or more coefficients in the unaffected population and/or affected population.

25. (Currently Amended) An apparatus for utilizing shape analysis to assess human fetal abnormality, comprising:

a processor; and

a memory storing instructions adapted to be executed by said processor to:

receive coordinates of points identifying ~~a~~ an anatomical shape in a human fetal image;

determine one or more coefficients of one or more mathematical functions that describe the identified anatomic shape; and

utilize the determined one or more coefficients as markers to assess human fetal abnormality.

26. (Currently Amended) A system for utilizing shape analysis to assess human fetal abnormality, comprising:

a means for receiving coordinates of points identifying ~~a~~ an anatomic shape in a human fetal image;

a means for determining one or more coefficients of one or more mathematical functions that describe the identified anatomic shape; and

a means for utilizing the determined one or more coefficients as markers to assess human fetal abnormality.